Appendix A

RF Test Data for BT V4.2(BDR/EDR) (Conducted Measurement)

Product Name: Beebar Speaker Microphone

Trade Mark: Beebar

Test Model: G2

Environmental Conditions

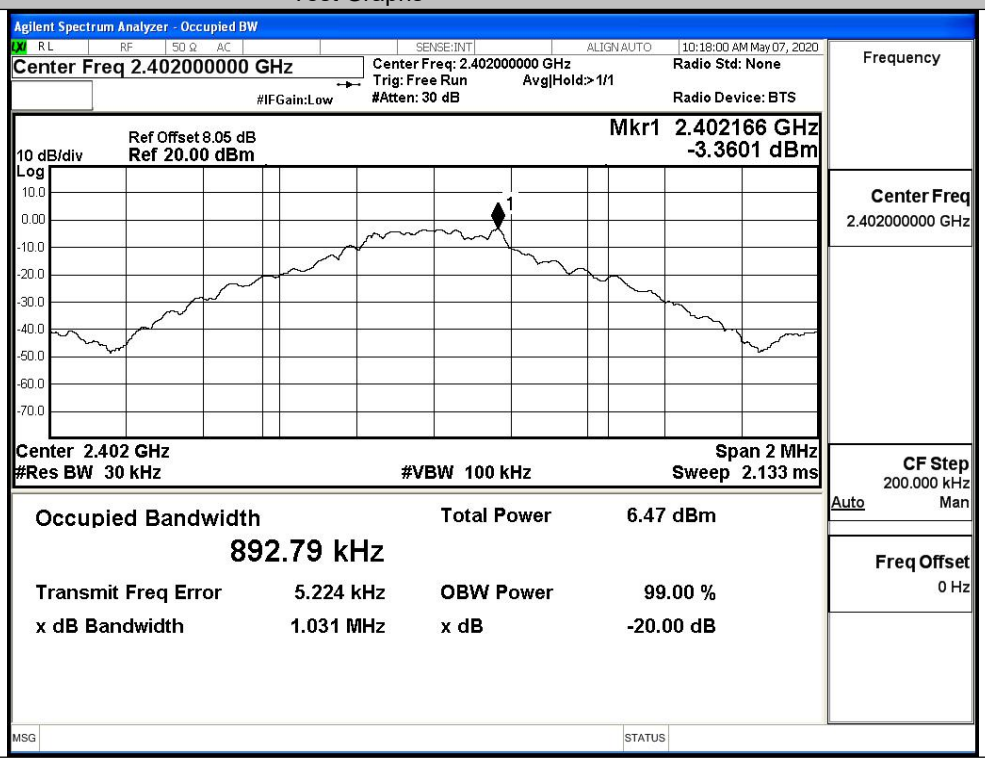
Temperature:	23.5 ° C
Relative Humidity:	54.2%
ATM Pressure:	100.0 kPa
Test Engineer:	Diamond Lu
Supervised by:	Li Huan

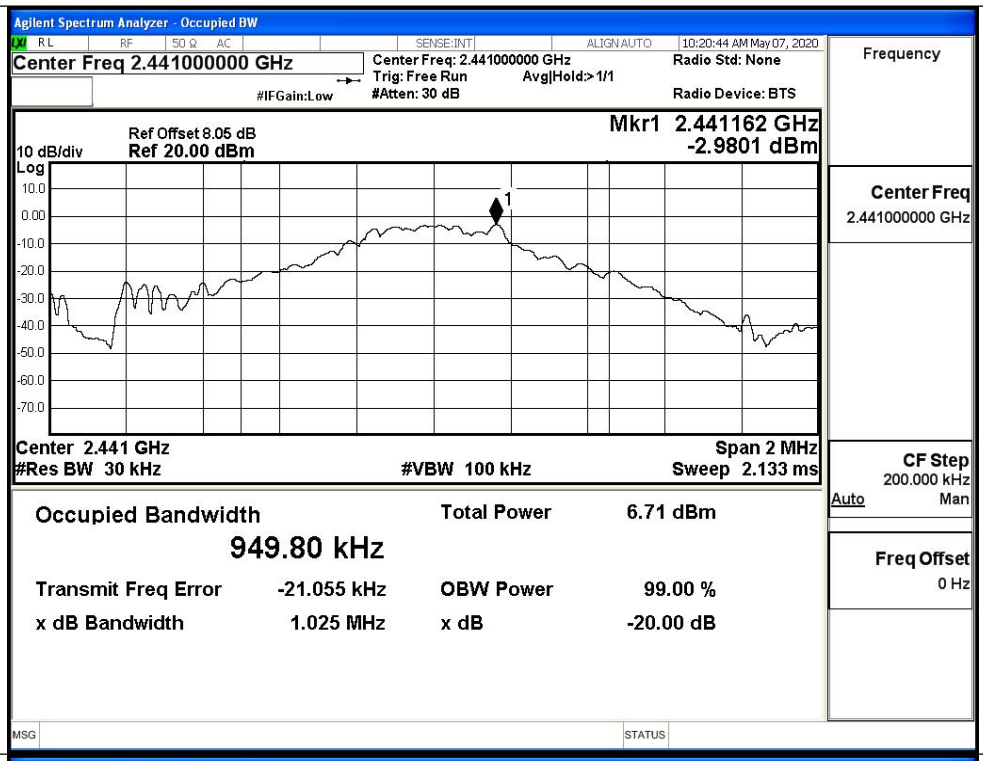
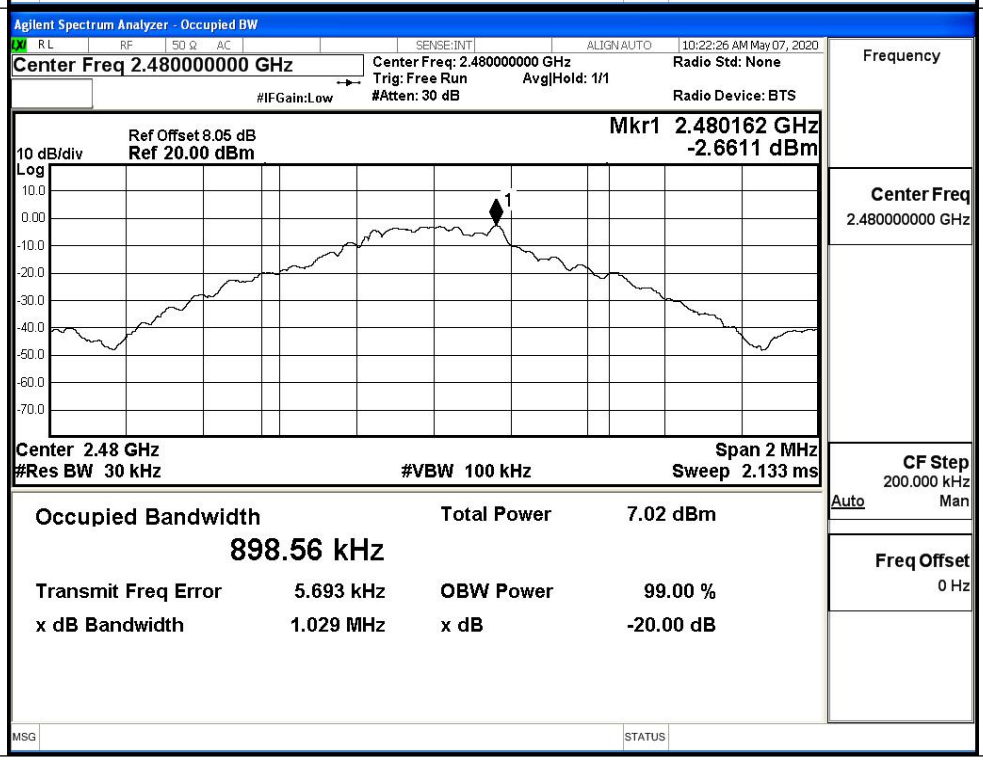
A.1 Maxmum Conducted Peak Output Power

Mode	Channel.	Maximum Peak Output Power [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-0.890	21	PASS
	MCH	-0.629	21	PASS
	HCH	-0.282	21	PASS
π/4DQPSK	LCH	-1.038	21	PASS
	MCH	-0.312	21	PASS
	HCH	-0.876	21	PASS
8DPSK	LCH	-0.989	21	PASS
	MCH	-0.719	21	PASS
	HCH	-0.452	21	PASS

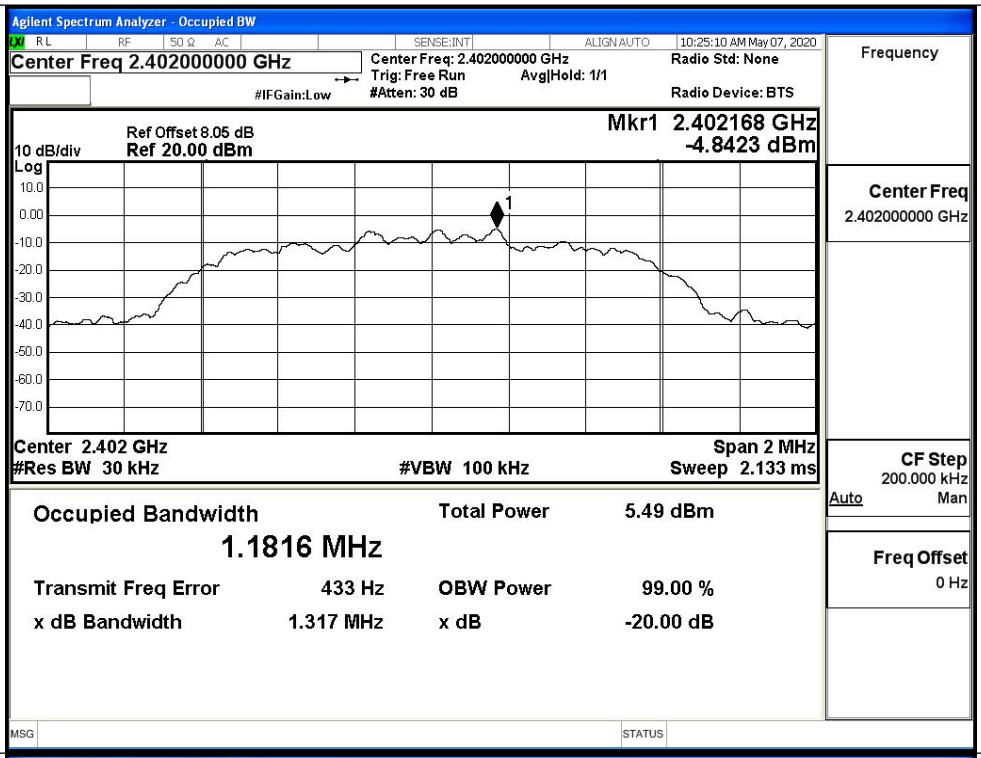
A.2 20dB Bandwidth

Mode	Channel.	20dB Bandwidth [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.031	Not Specified	PASS
	MCH	1.025	Not Specified	PASS
	HCH	1.029	Not Specified	PASS
π/4DQPSK	LCH	1.317	Not Specified	PASS
	MCH	1.293	Not Specified	PASS
	HCH	1.291	Not Specified	PASS
8DPSK	LCH	1.297	Not Specified	PASS
	MCH	1.297	Not Specified	PASS
	HCH	1.294	Not Specified	PASS

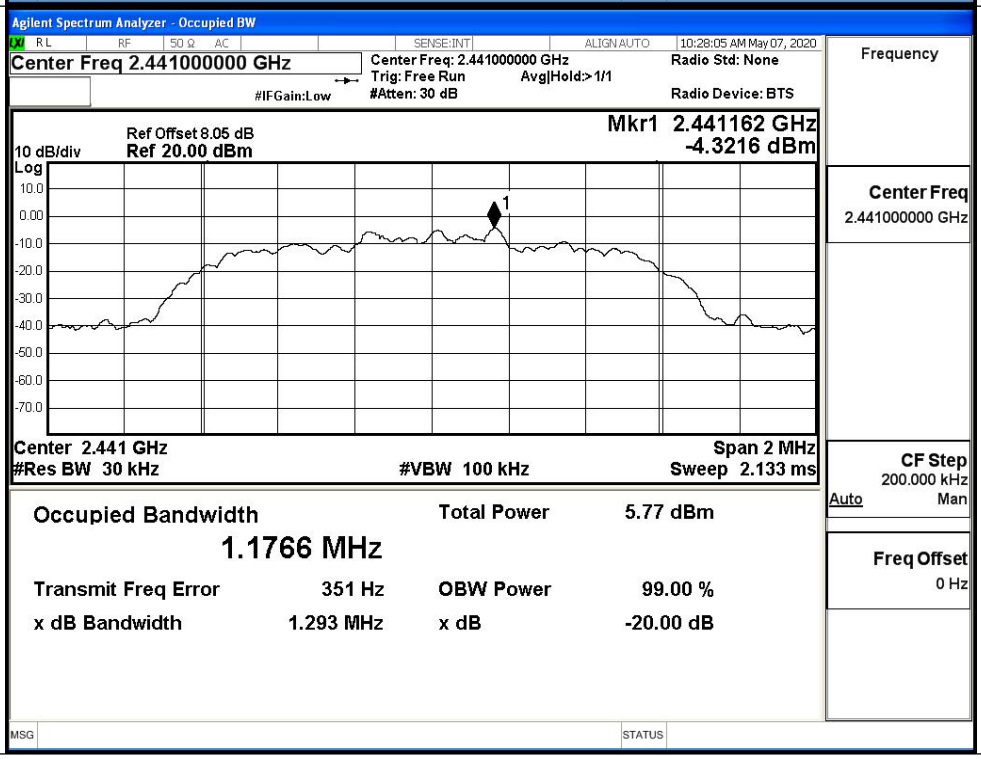
Test Graphs		
GFSK/LCH		

GFSK/MCH	
GFSK/HCH	

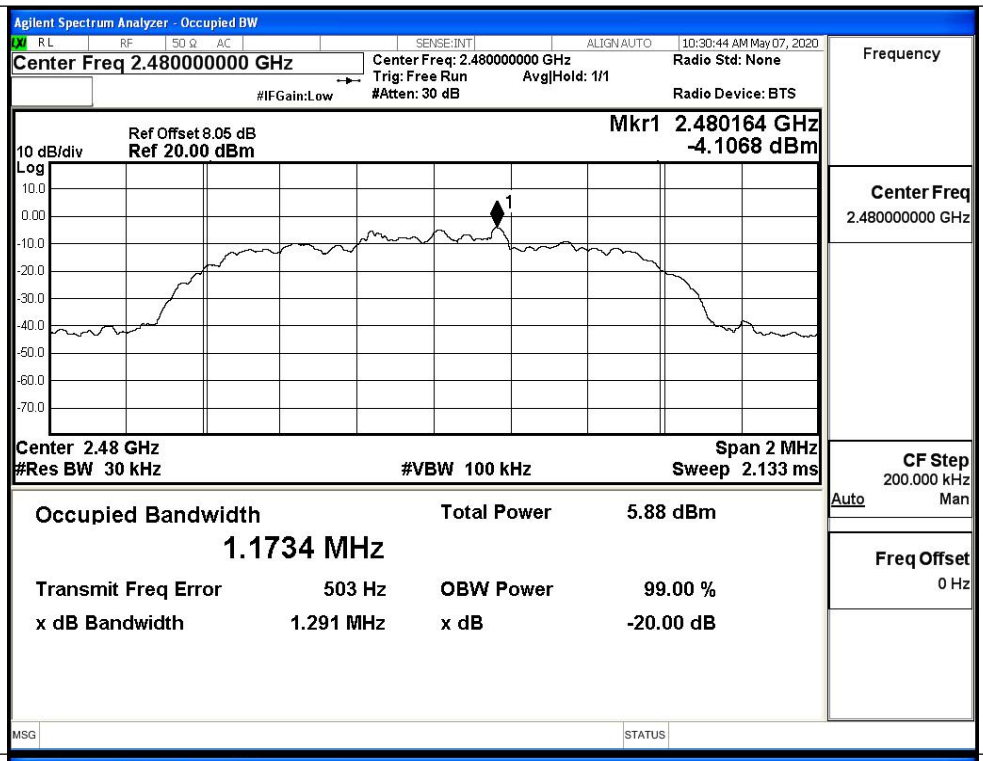
π/4DQPSK/LCH



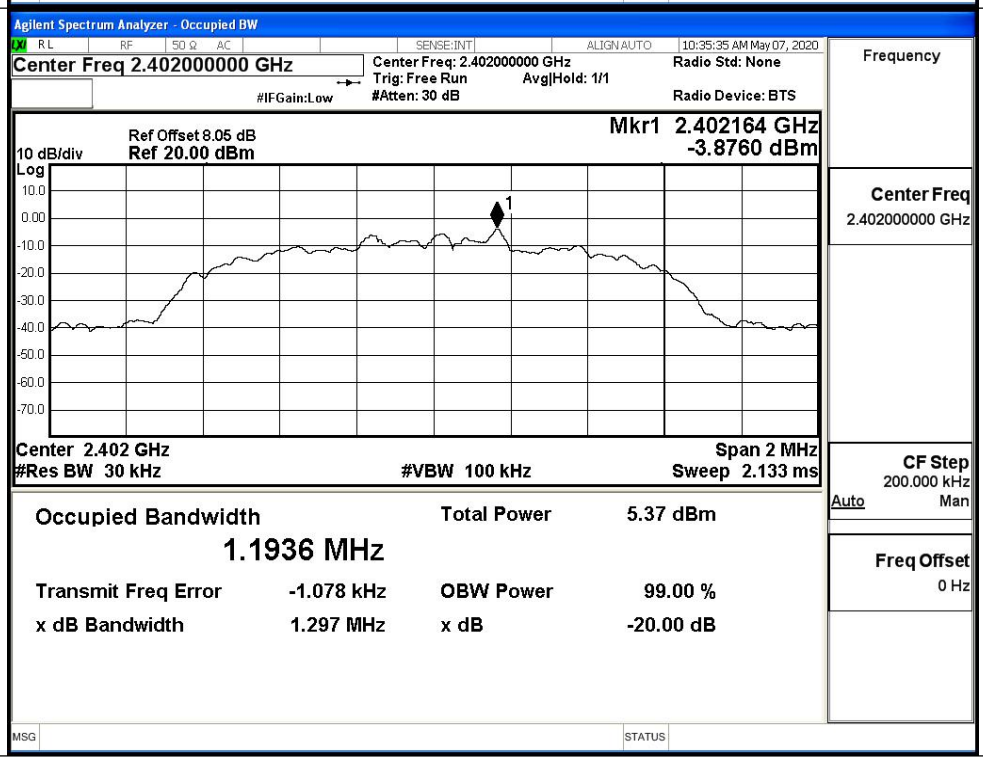
π/4DQPSK/MCH

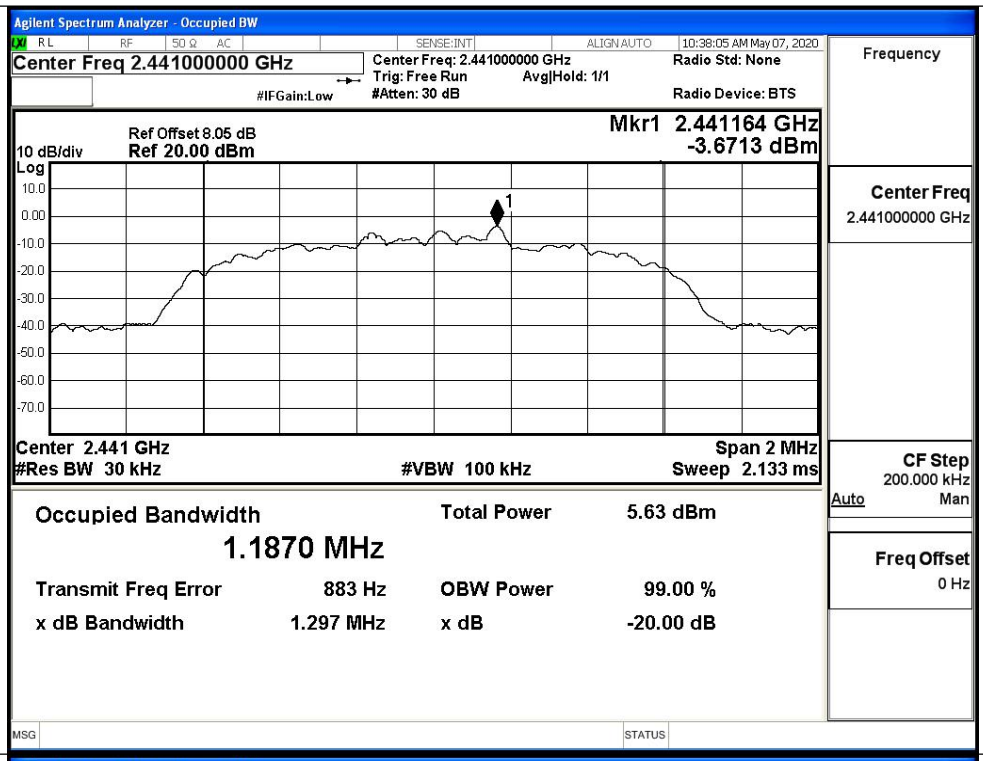
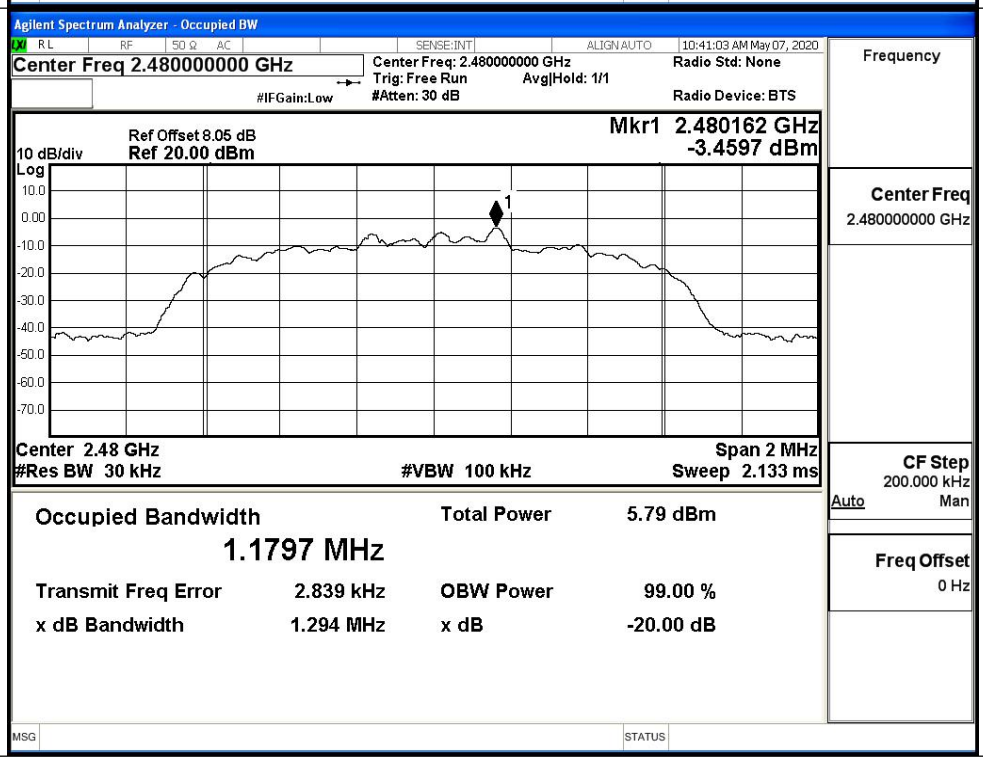


π/4DQPSK/HCH



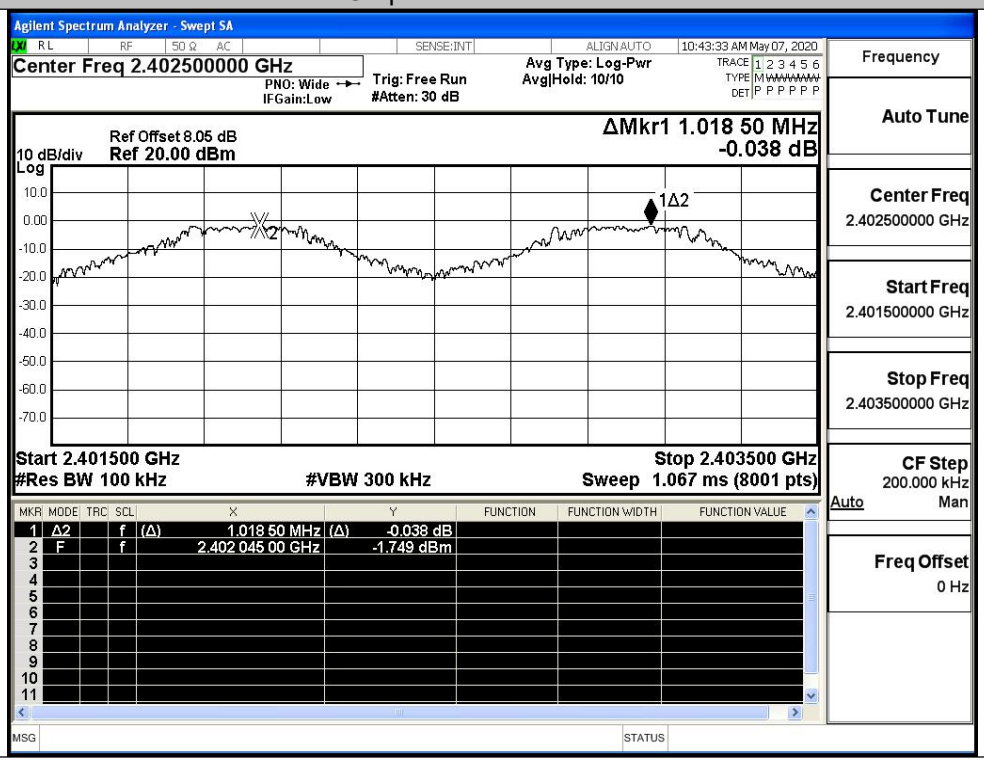
8DPSK/LCH

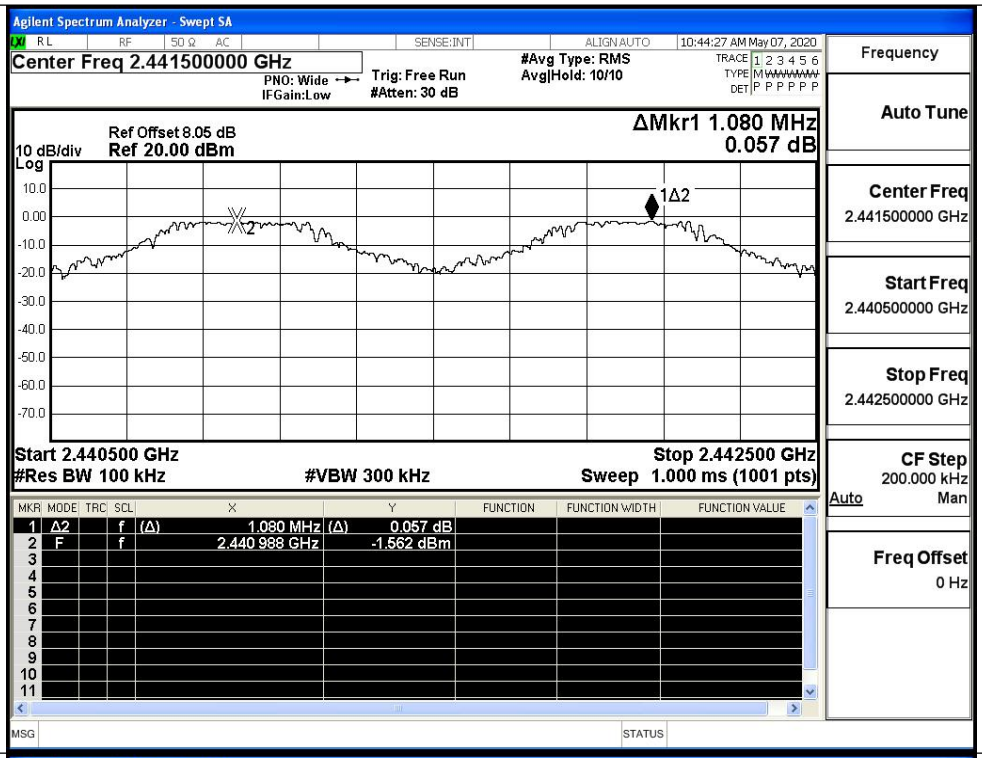
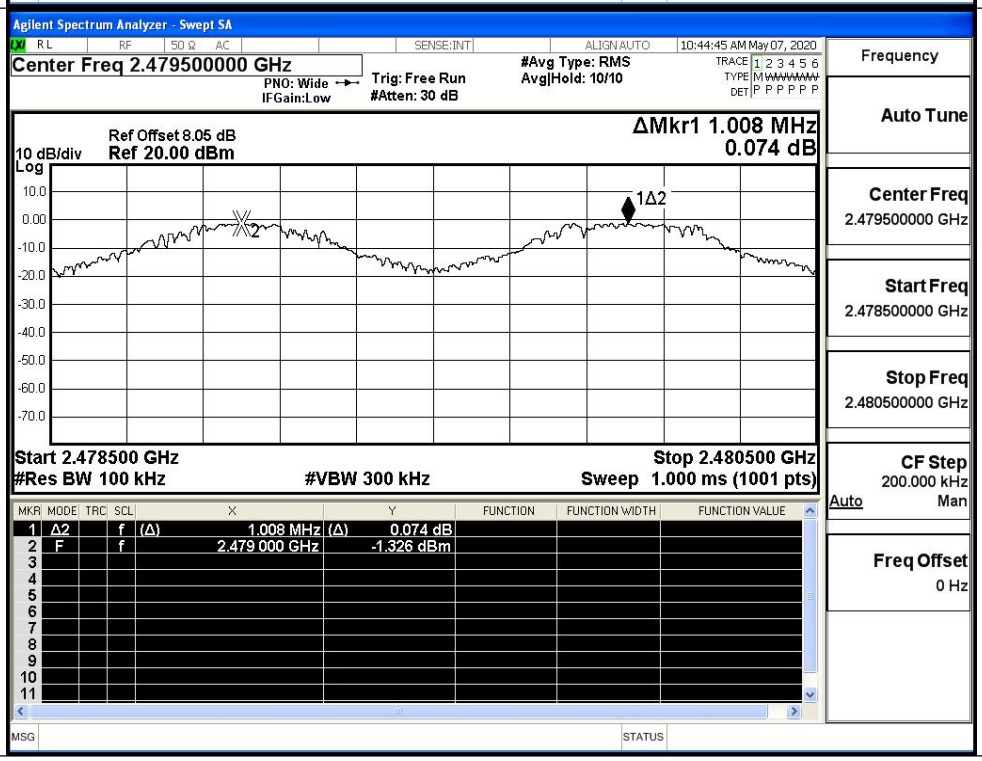


8DPSK/MCH	
8DPSK/HCH	

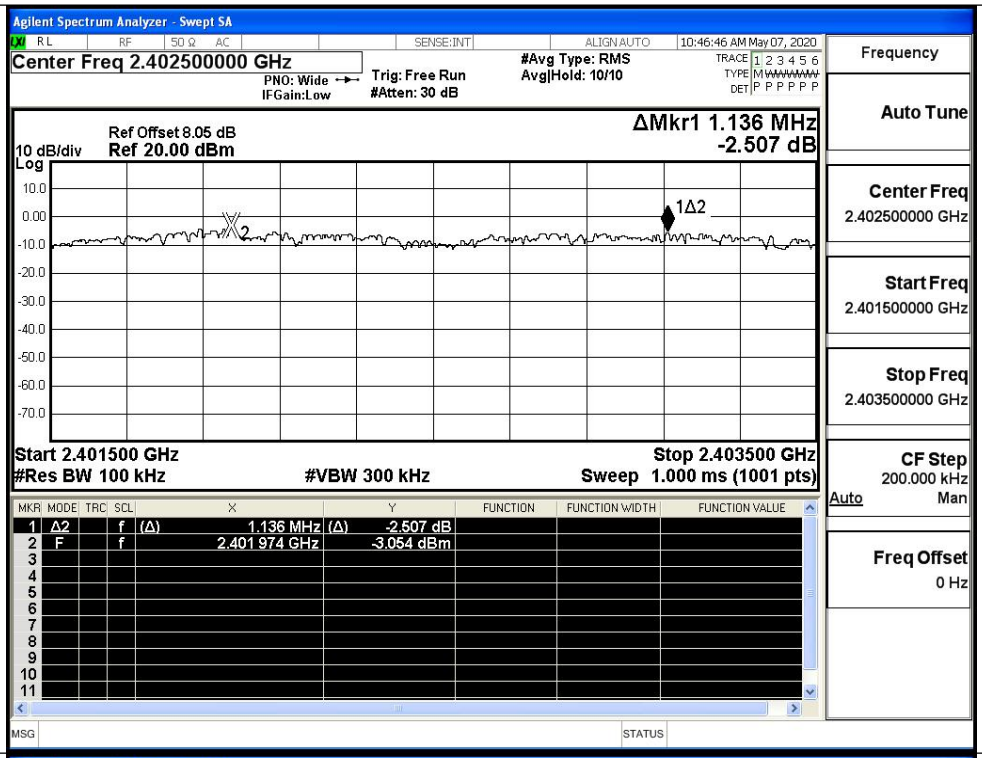
A.3 Carrier Frequency Separation

Mode	Channel.	Carrier Frequency Separation [MHz]	Limit [MHz]	Verdict
GFSK	LCH	1.019	0.687	PASS
	MCH	1.080	0.687	PASS
	HCH	1.008	0.687	PASS
π/4DQPSK	LCH	1.136	0.878	PASS
	MCH	1.774	0.878	PASS
	HCH	1.184	0.878	PASS
8DPSK	LCH	1.012	0.865	PASS
	MCH	1.054	0.865	PASS
	HCH	1.064	0.865	PASS

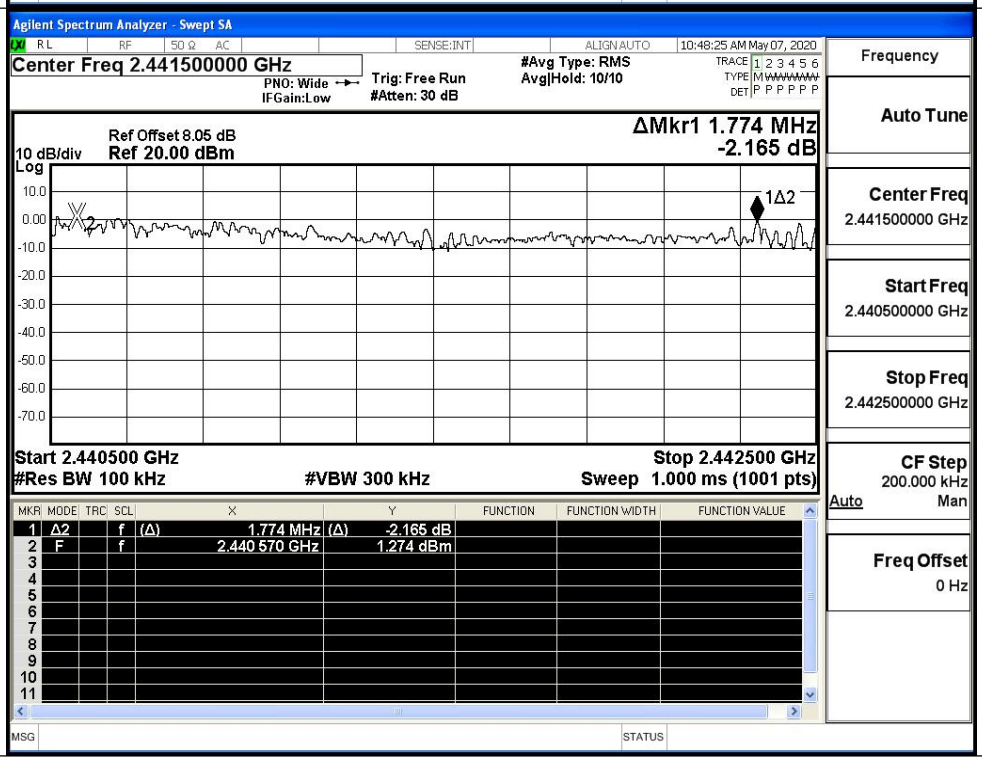
Test Graphs		
GFSK/LCH		

GFSK/MCH		
GFSK/HCH		

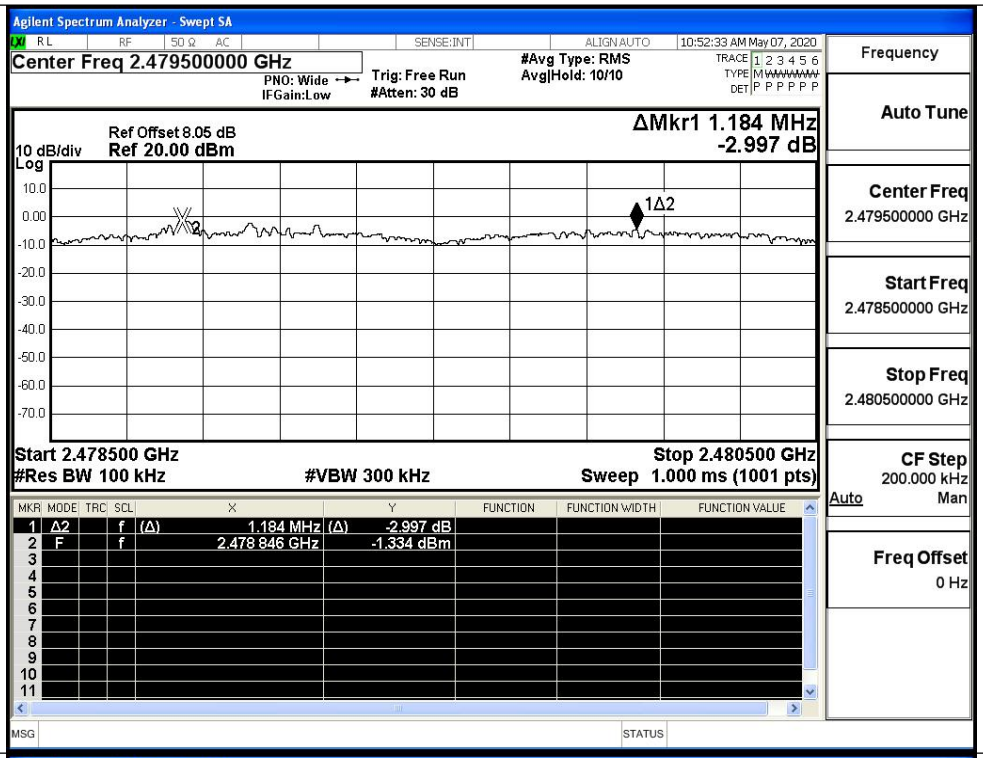
π/4DQPSK/LCH



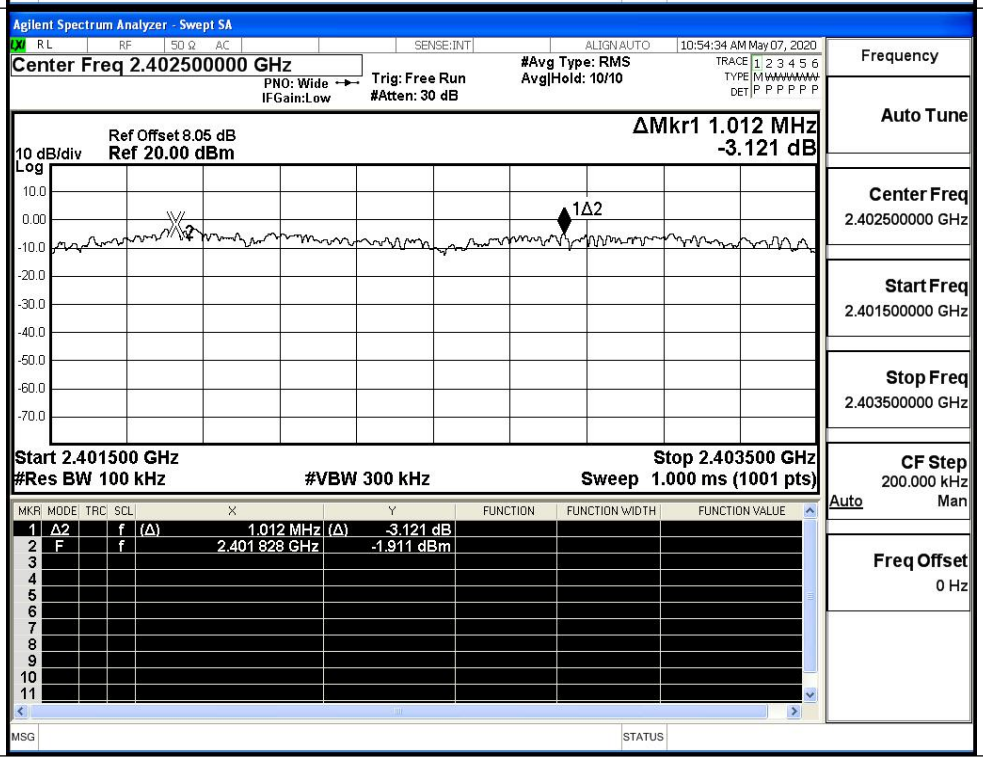
π/4DQPSK/MCH



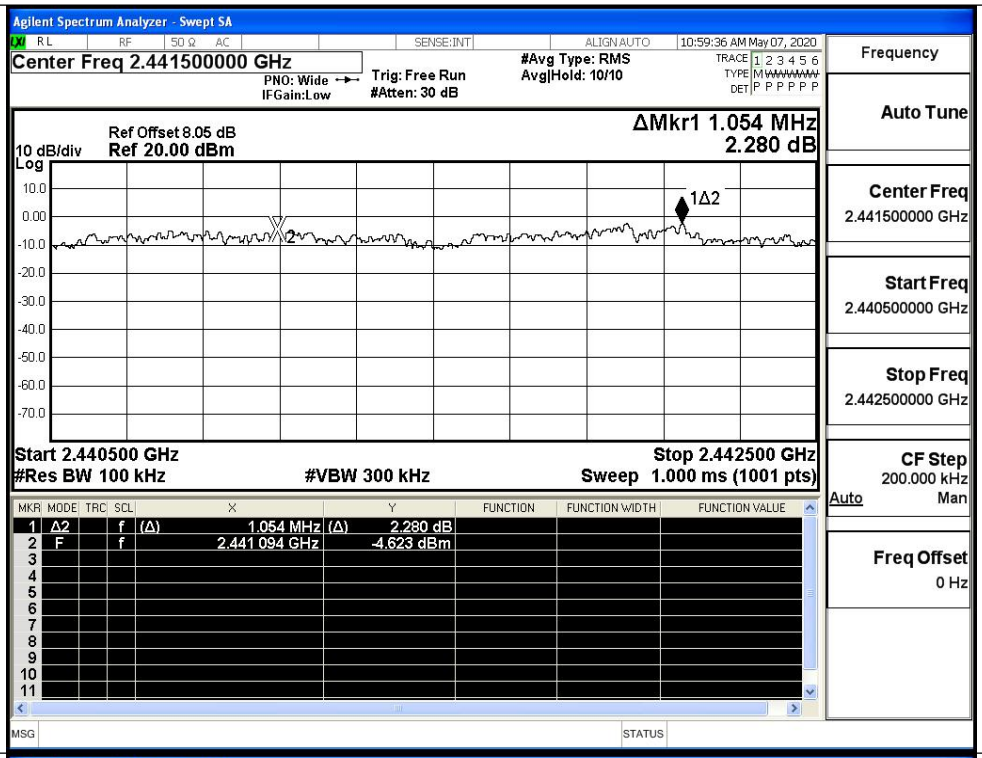
π/4DQPSK/HCH



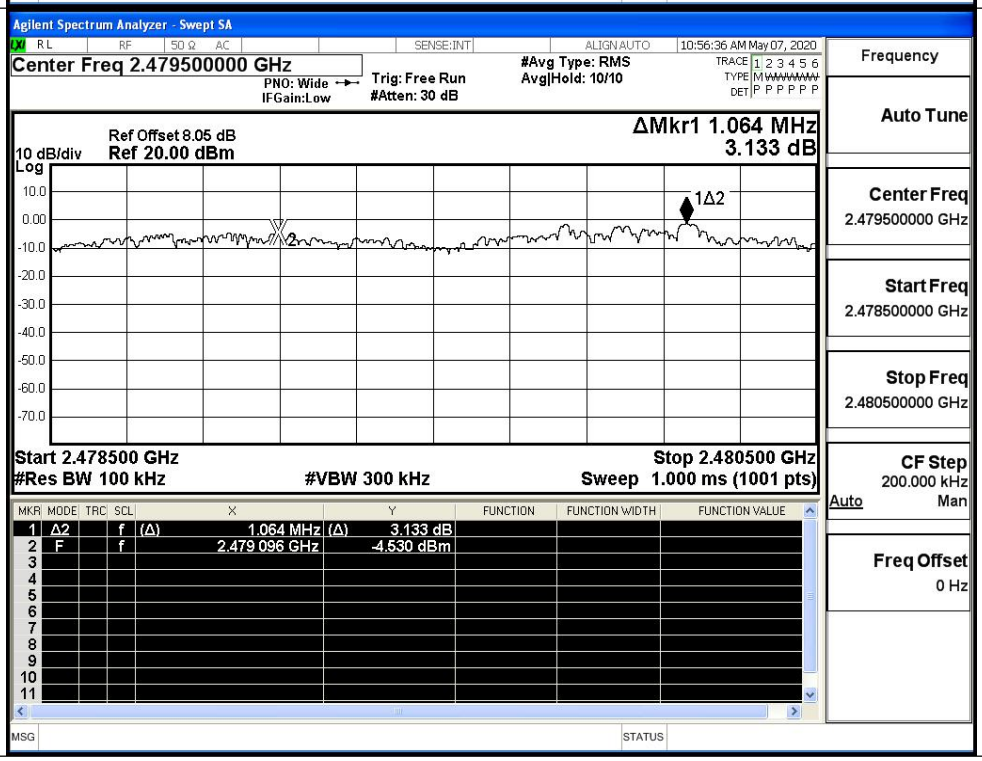
8DPSK/LCH



8DPSK/MCH

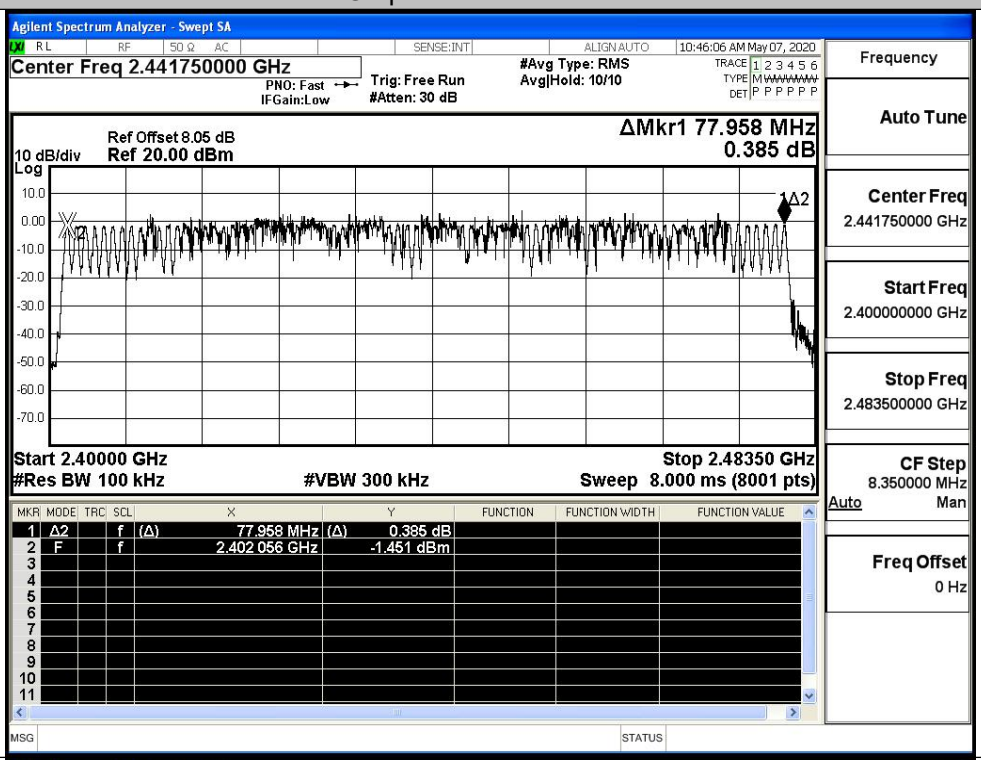
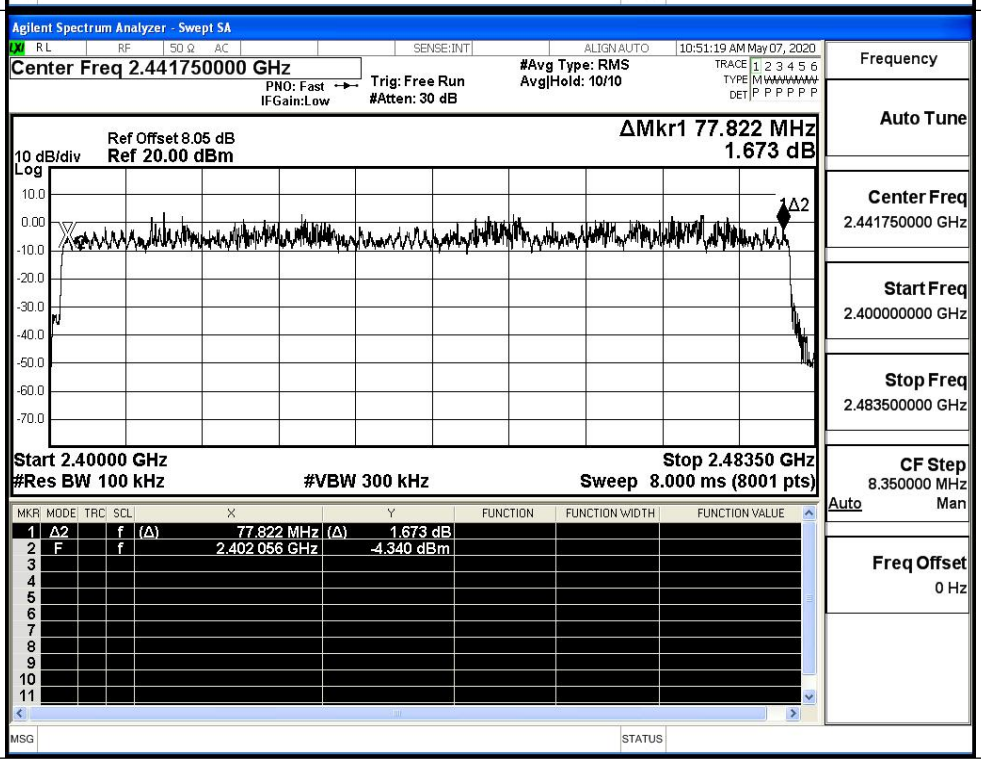


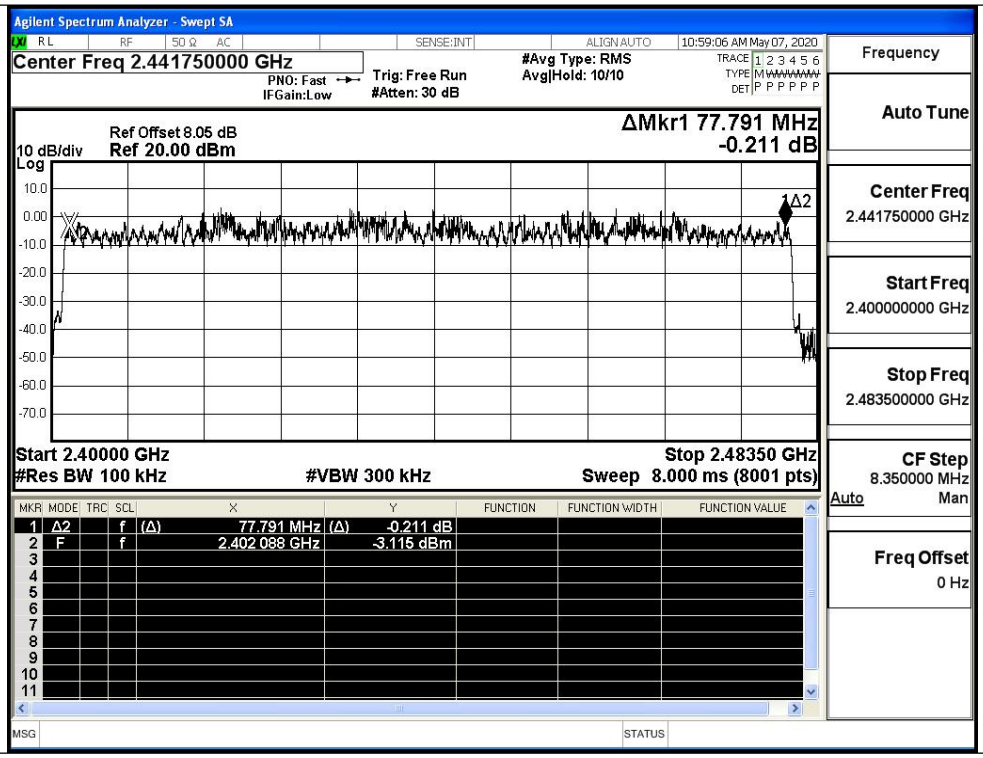
8DPSK/HCH



A.4 Hopping Channel Number

Mode	Channel.	Number of Hopping Channel [N]	Limit [N]	Verdict
GFSK	Hop	79	>=15	PASS
π/4DQPSK	Hop	79	>=15	PASS
8DPSK	Hop	79	>=15	PASS

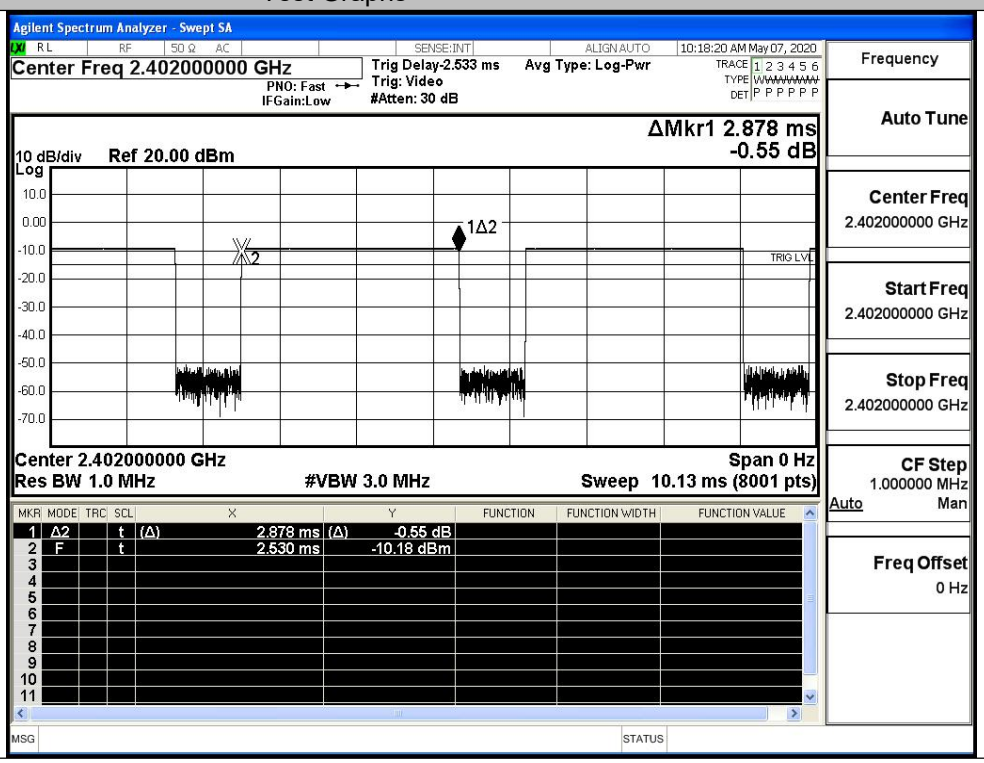
Test Graphs		
GFSK/Hop		
π/4DQPSK/Hop		

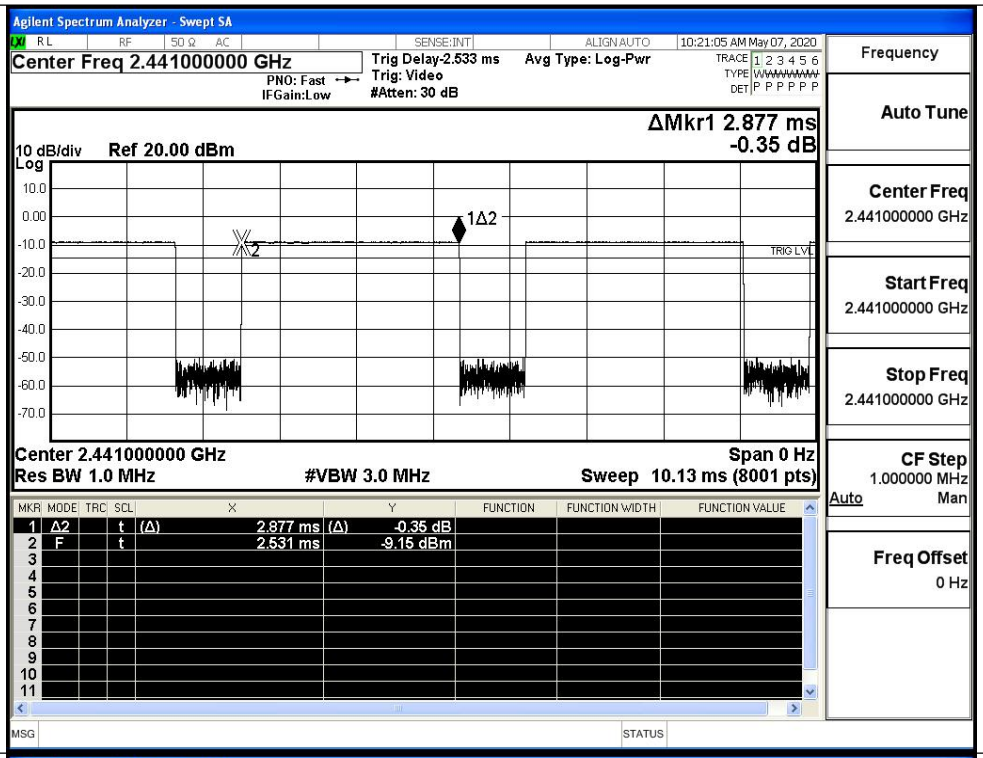
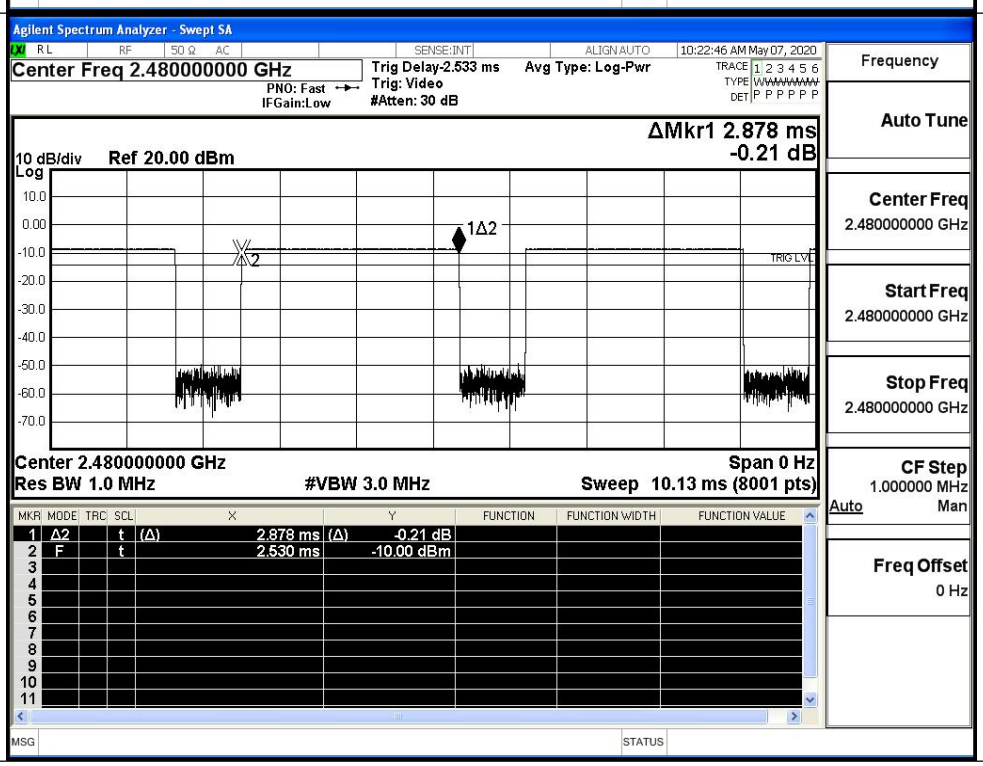
8DPSK/Hop		

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441750000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 10/10
10:59:06 AM May 07, 2020
Ref Offset 8.05 dB
10 dB/div
Ref 20.00 dBm
ΔMkr1 77.791 MHz
-0.211 dB
Start 2.40000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 2.48350 GHz
Sweep 8.000 ms (8001 pts)
1 Δ2 (Δ) 77.791 MHz (Δ) -0.211 dB
2 F 2.402 088 GHz -3.115 dBm
Frequency
Auto Tune
Center Freq 2.441750000 GHz
Start Freq 2.400000000 GHz
Stop Freq 2.483500000 GHz
CF Step 8.350000 MHz
Auto Man
Freq Offset 0 Hz

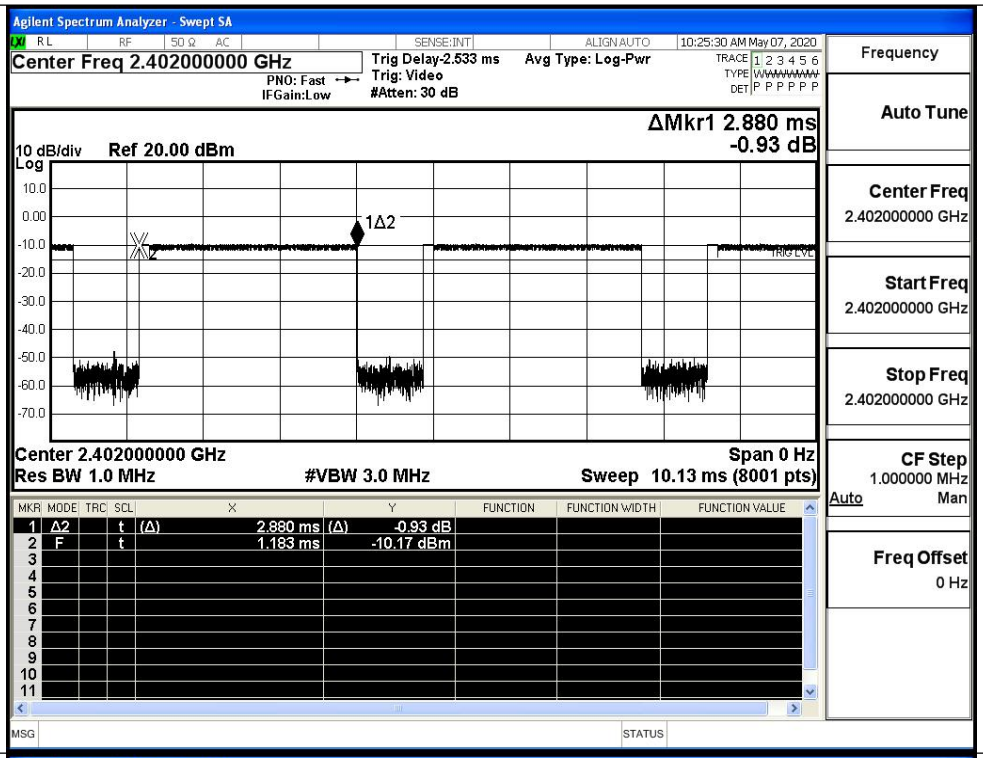
A.5 Dwell Time

Mode	Packet	Channel	Burst Width [ms/hop/ch]	Total Hops[hop*ch]	Dwell Time[s]	Limit [s]	Verdict
GFSK	DH5	LCH	2.88	106.7	0.307	0.4	PASS
	DH5	MCH	2.88	106.7	0.307	0.4	PASS
	DH5	HCH	2.88	106.7	0.307	0.4	PASS
π/4DQPSK	2DH5	LCH	2.88	106.7	0.307	0.4	PASS
	2DH5	MCH	2.88	106.7	0.307	0.4	PASS
	2DH5	HCH	2.88	106.7	0.307	0.4	PASS
8DPSK	3DH5	LCH	2.88	106.7	0.307	0.4	PASS
	3DH5	MCH	2.88	106.7	0.307	0.4	PASS
	3DH5	HCH	2.88	106.7	0.307	0.4	PASS

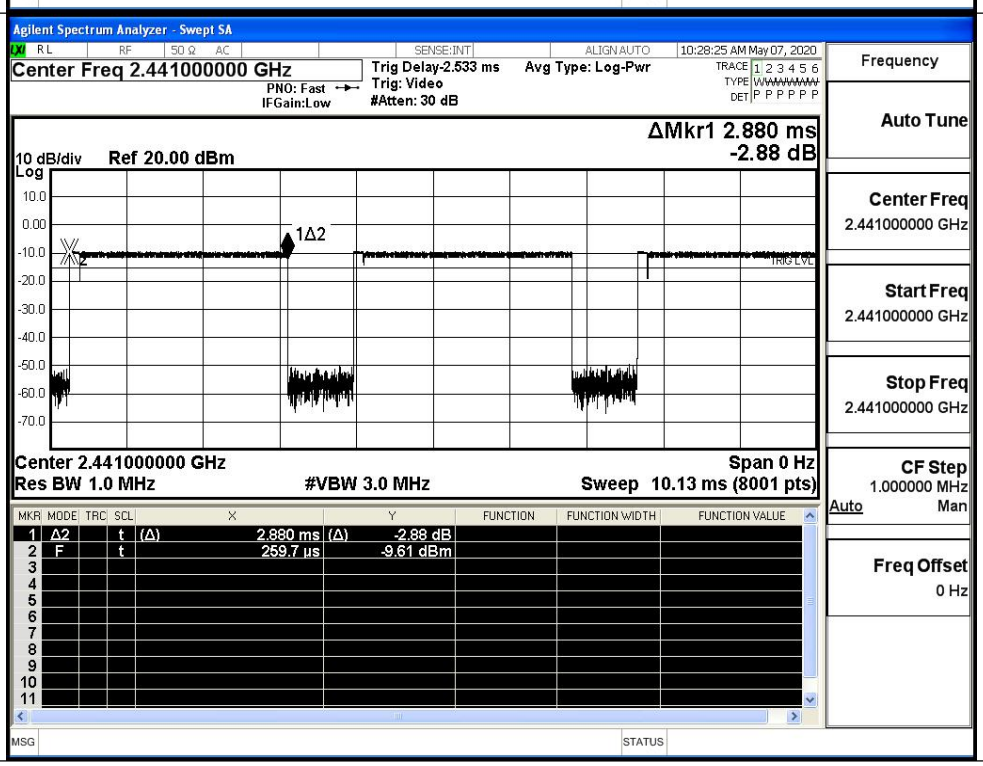
Test Graphs	
GFSK_DH5/LCH	

GFSK_DH5/MCH	
GFSK_DH5/HCH	

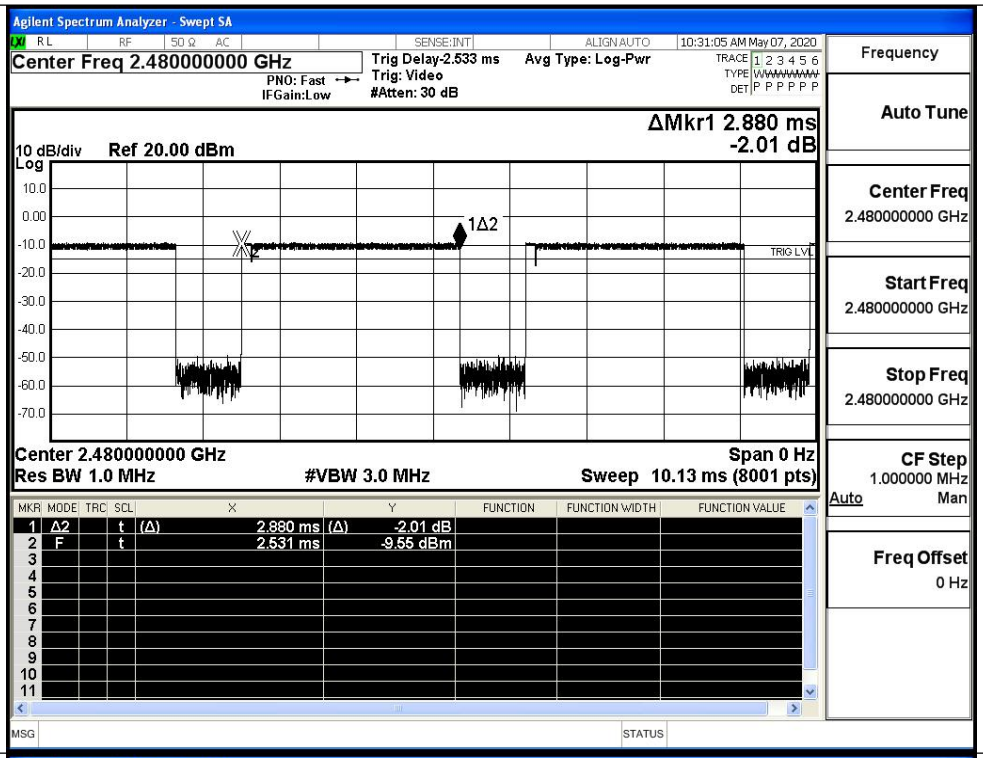
π/4DQPSK
_2DH5/LCH



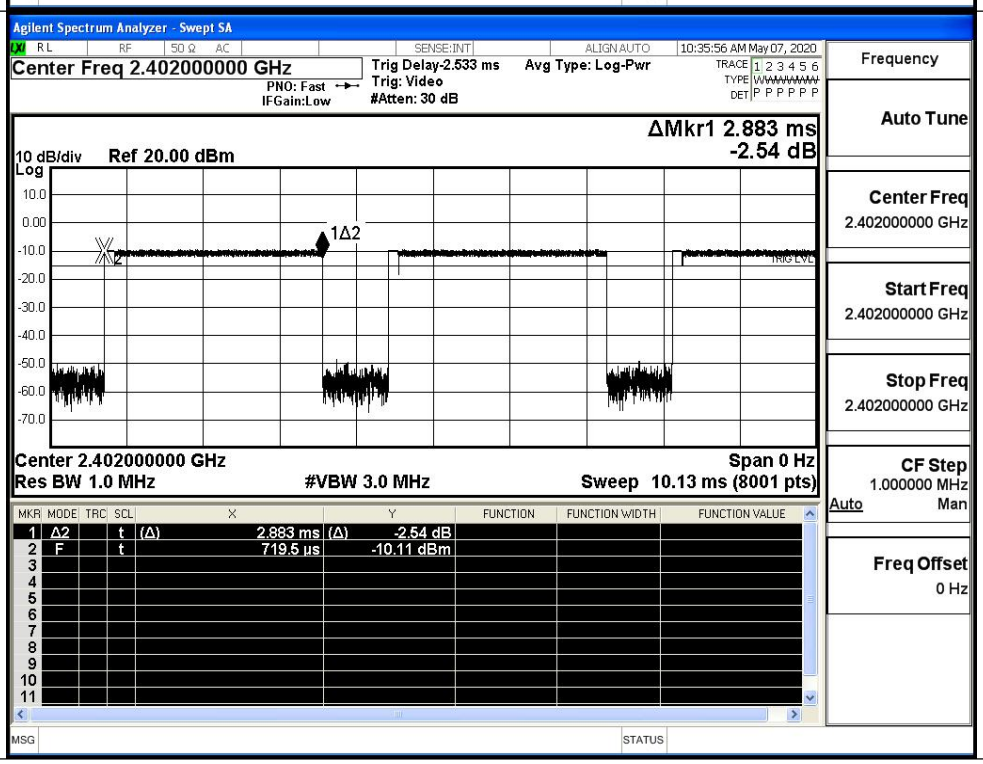
π/4DQPSK
_2DH5/MCH

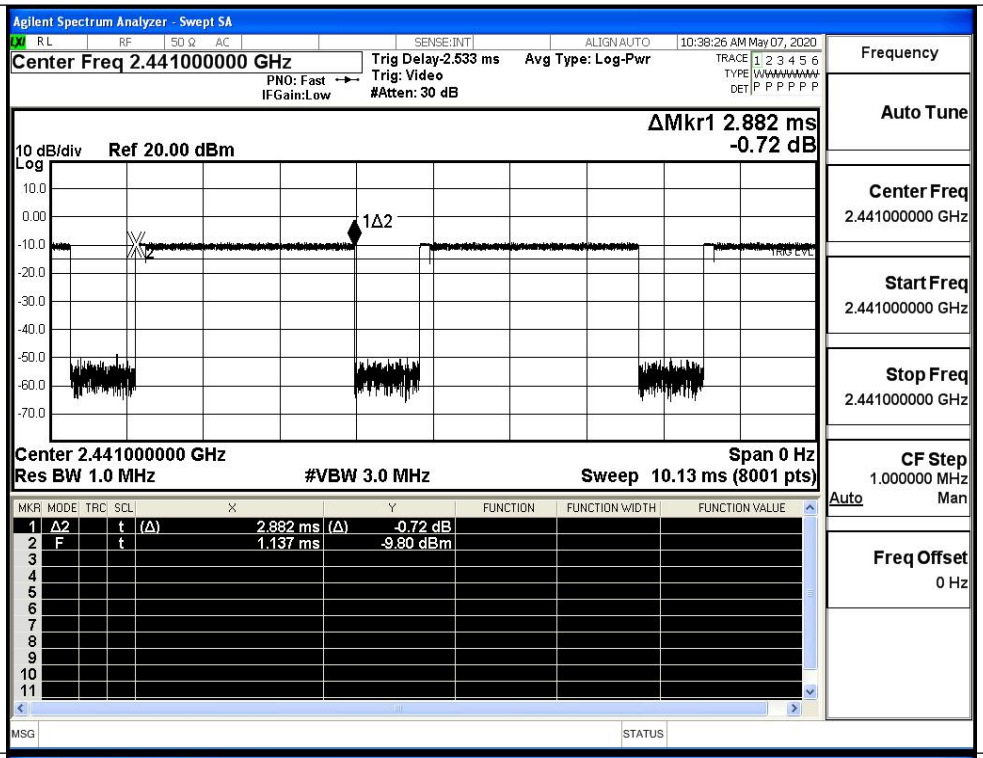
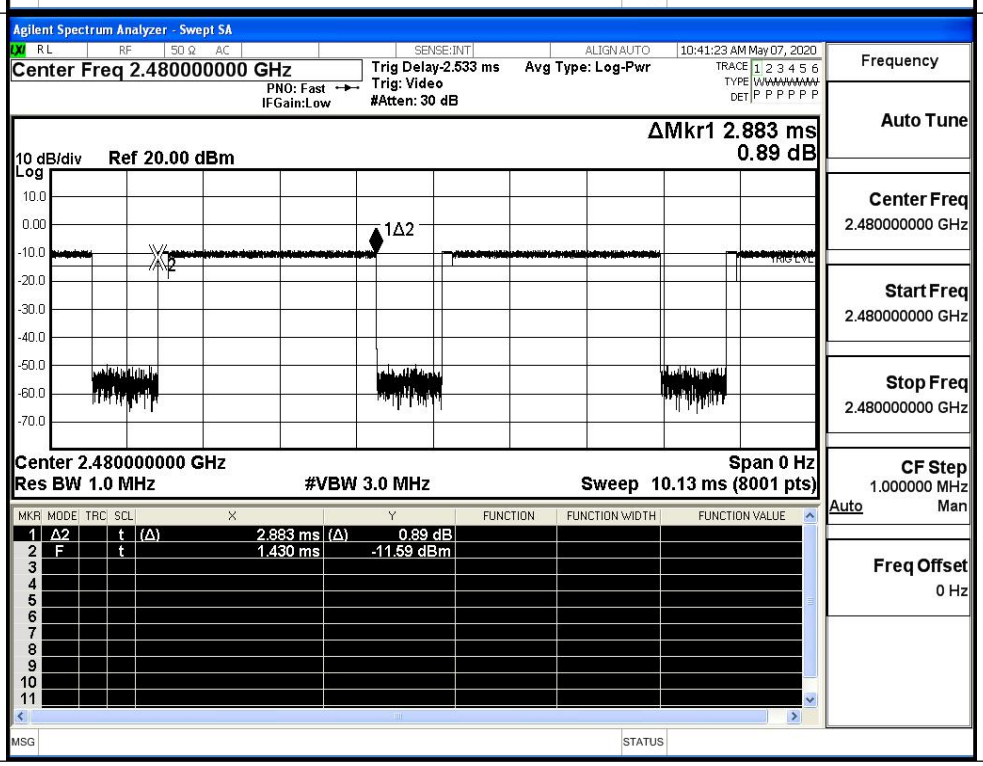


π/4DQPSK _2DH5/HCH



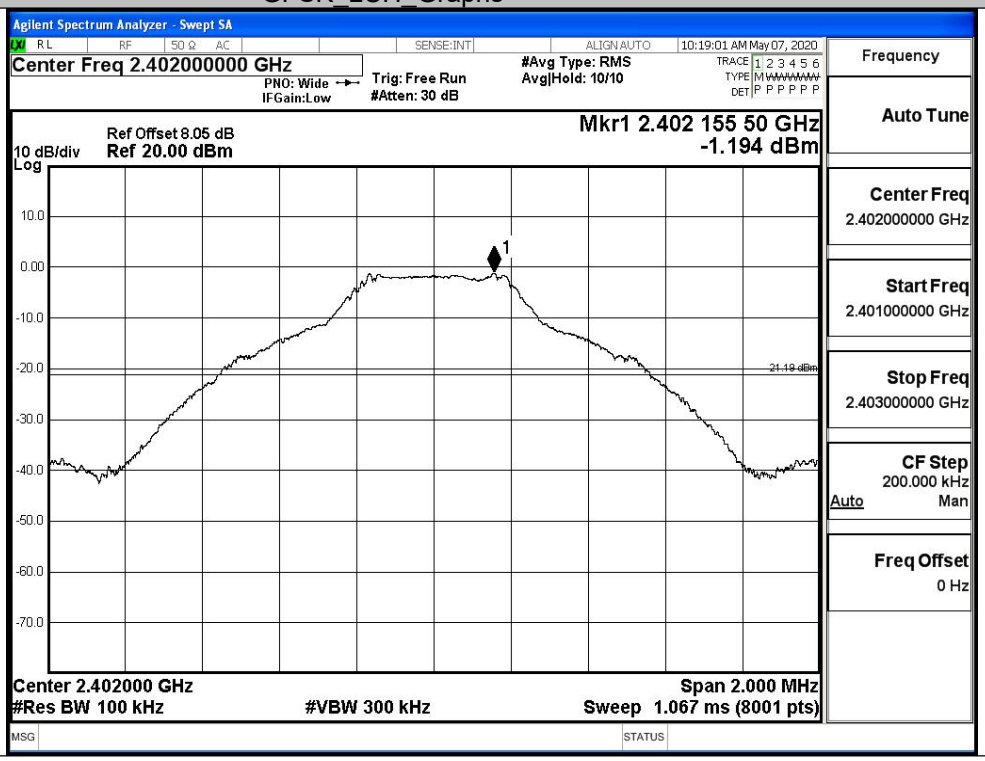
8DPSK _3DH5/LCH

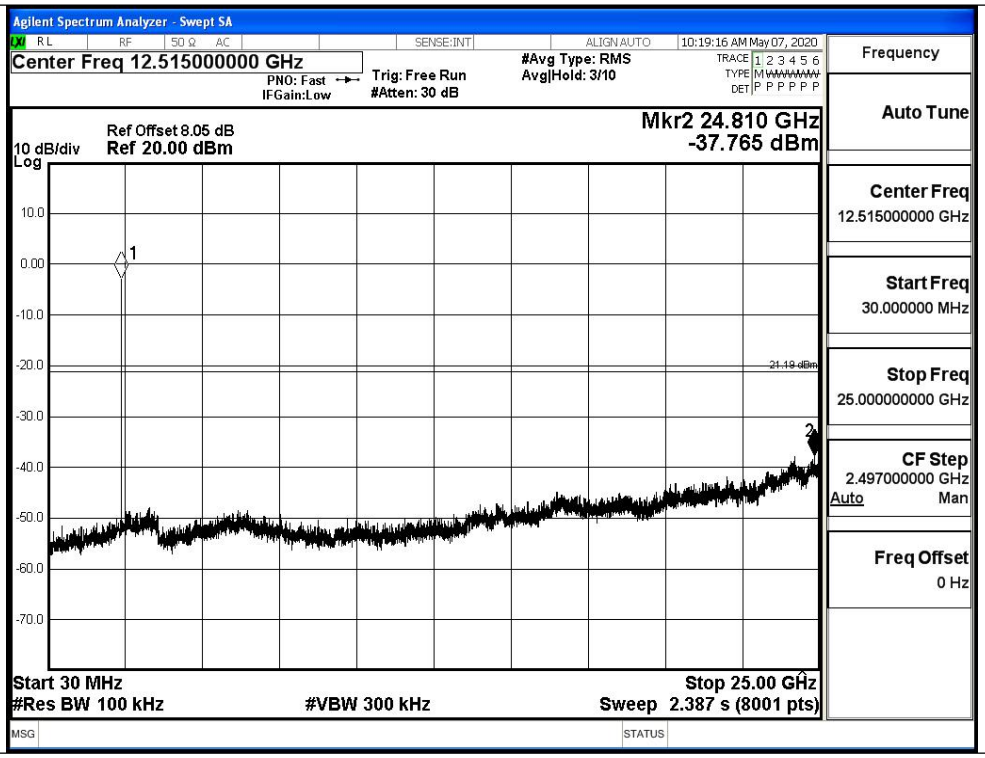


8DPSK _3DH5/MCH	
8DPSK _3DH5/HCH	

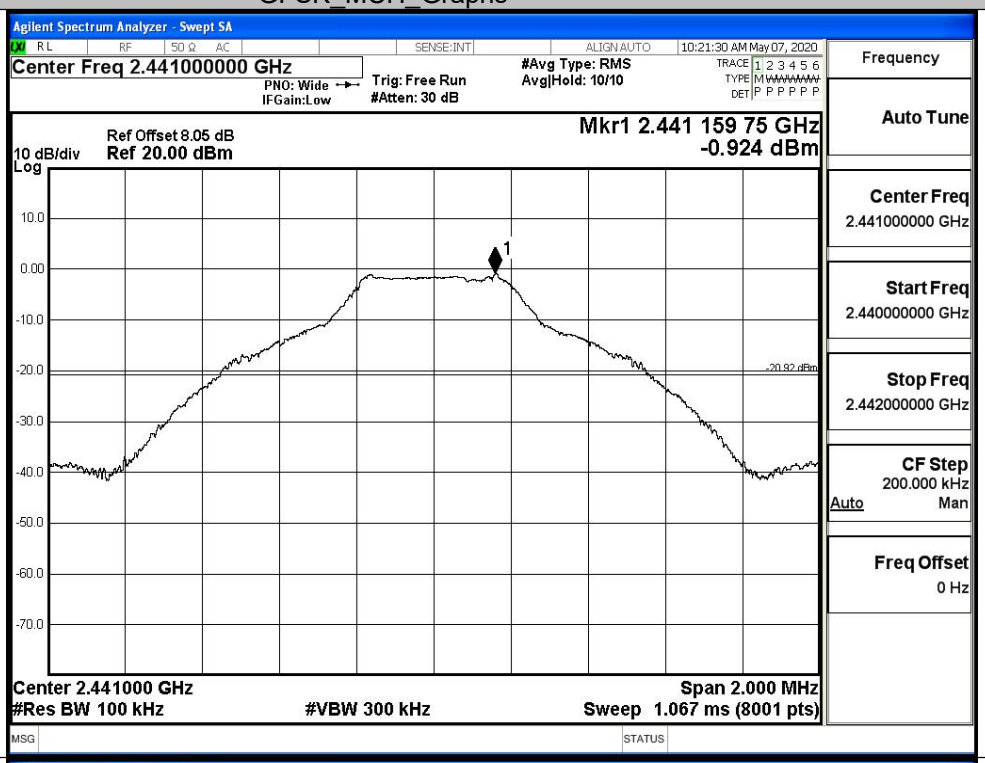
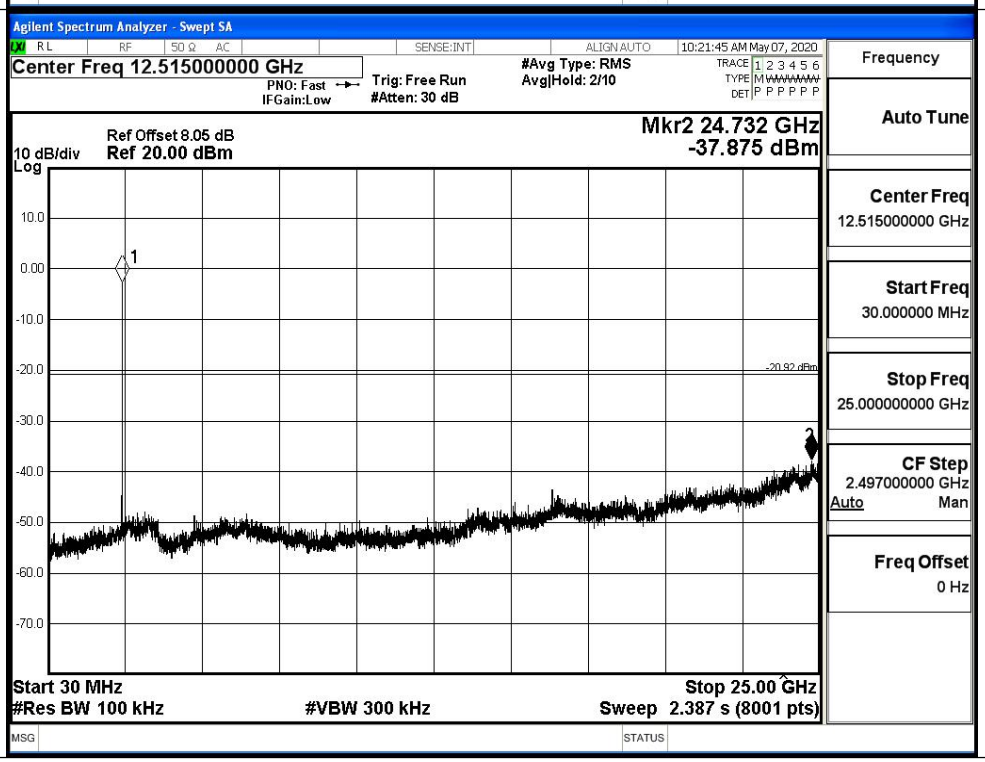
A.6 RF Conducted Spurious Emissions

Mode	Channel	Pref [dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
GFSK	LCH	-1.194	-37.765	-21.194	PASS
	MCH	-0.924	-37.875	-20.924	PASS
	HCH	-0.656	-37.775	-20.656	PASS
π/4DQPSK	LCH	-1.709	-37.898	-21.709	PASS
	MCH	-1.521	-37.094	-21.521	PASS
	HCH	-1.469	-37.219	-21.469	PASS
8DPSK	LCH	-1.77	-37.128	-21.770	PASS
	MCH	-1.594	-38.518	-21.594	PASS
	HCH	-1.452	-36.643	-21.452	PASS

GFSK_LCH_Graphs		
Pref		

Puw		

Agilent Spectrum Analyzer - Swept SA
Center Freq 12.515000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
#Avg Type: RMS
Avg|Hold: 3/10
10:19:16 AM May 07, 2020
Ref Offset 8.05 dB
10 dB/div
Ref 20.00 dBm
Log
Mkr2 24.810 GHz
-37.765 dBm
21.19 dBm
Start 30 MHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.00 GHz
Sweep 2.387 s (8001 pts)
Frequency
Auto Tune
Center Freq
12.515000000 GHz
Start Freq
30.000000 MHz
Stop Freq
25.000000000 GHz
CF Step
2.497000000 GHz
Auto
Man
Freq Offset
0 Hz

GFSK_MCH_Graphs		
Pref		
Puw